

CALIFORNIA REGIONAL WATER QUALITY CONTROL BOARD
CENTRAL VALLEY REGION

ORDER NO. R5-2009-_____

WASTE DISCHARGE REQUIREMENTS
FOR
STANISLAUS COUNTY DEPARTMENT OF ENVIRONMENTAL RESOURCES
GEER ROAD CLASS III LANDFILL
POST-CLOSURE MAINTENANCE AND CORRECTIVE ACTION
STANISLAUS COUNTY

The California Regional Water Quality Control Board, Central Valley Region, (hereafter Regional Water Board) finds that:

1. The Stanislaus County Department of Environmental Resources (hereafter referred to as Discharger) owns and formerly operated a municipal solid waste landfill that was closed in 1995. The landfill is eight miles east of Modesto, near the Tuolumne River in the southeast corner of Section 34, Township 3 South, Range 10 East, and the northeast corner of Section 3, Township 4 South, Range 10 East, Mount Diablo Base and Meridian, as shown in Attachment A, which is incorporated herein and made part of this Order.
2. The 168-acre facility comprises Assessor's Parcel Number 9-29-09, 9-29-12, and 18-03-13 and includes the closed Class III landfill and a sedimentation basin. The site was operated as a sanitary landfill by the County of Stanislaus from 1970 until 1990 and accepted residential, commercial, industrial (including cannery waste), and construction and demolition wastes. The landfill used a trench and fill method and consists of a single unlined landfill unit. The Discharger estimates that the landfill contains approximately 4.5 million tons of waste. The landfill was closed in 1995 with a geomembrane and vegetative soil on the top deck and compacted clay and vegetative soil on the side slopes. Closure was approved in July 1996.
3. The Discharger submitted a 31 October 2007 amended Report of Waste Discharge (RWD) as part of the Joint Technical Document (JTD) for the landfill. The information in the RWD/JTD has been used in writing these waste discharge requirements (WDRs). The RWD contains the applicable information required in Title 27, California Code of Regulations (CCR), Chapter 4, Subchapter 3, Article 4.
4. Previous WDRs for the facility, including most recent Order No. 5-00-087, classified the facility as a Class III waste disposal site. This Order continues to classify the landfill as a Class III landfill in accordance with Title 27, CCR Section 20005, et seq. (Title 27).



SITE DESCRIPTION

5. The site lies near the eastern edge of the San Joaquin Valley adjacent to the Tuolumne River. The terrain is characterized by river terraces and is gently sloping with elevations at approximately 140 feet above mean sea level.
6. The Foothills Fault zone is the nearest significant fault and is located approximately 25 miles east of the site. The maximum credible earthquake (MCE) for the Foothills Fault zone is a magnitude 6.5 event. Other regionally significant faults are located within the Coast Ranges geomorphic province to the west of the site. One of these, the Calaveras Fault, approximately 50 miles west of the landfill, may be a potential source of seismicity with an MCE of 7.5. The maximum peak bedrock acceleration expected at the landfill for an event from either the Foothills or the Calaveras Faults is approximately 0.13 g.
7. Land within 1,000 feet of the facility is used for irrigated agricultural purposes, buffer area, and residential housing. Around the perimeter of the site, agriculture is the principal use, with the predominant crops being walnuts and peaches. A 15-acre multiple family housing development, Pine Meadows Mobile Estates with 174 trailer spaces, is located across Geer Road 350 feet east of the landfill.
8. The facility receives an average of 12.2 inches of precipitation per year as measured by Modesto Irrigation District. Mean evaporation is estimated to be between 65-75 inches per year. Based on these data, the average annual net evaporation is approximately 53-63 inches.
9. The 100-year, 24-hour precipitation event for Modesto is 2.43 inches, as calculated from rainfall intensity-duration-frequency curves from the County of Stanislaus Department of Environmental Resources Storm Drain Design Manual, developed with data from the California Department of Water Resources.
10. According to the Federal Insurance Administration Map, Stanislaus County, Community Panel No. 060384055A, August 1980, the landfill footprint is outside the 100-year flood plain. However, it is within Zone C (area of minimal flooding). The 100-year flood plain crosses the southwest property boundary, an area that is open land outside of the footprint of the landfill. During the winter of 1997-1998, portions of the property were flooded. The landfill area is protected by a 10-foot high berm.
11. There are five domestic groundwater supply wells near the landfill including two immediately south of the landfill (Streeter wells) and three east of the landfill (Pine Wood Meadows wells), as shown on Attachment B, which is incorporated herein and made part of this Order. In 2006, the Discharger purchased a property near the northern section of the landfill and abandoned its well (former Lopez well).

WASTES AND THEIR CLASSIFICATION

12. The landfill began operation in November 1970 and was continuously operated by Stanislaus County. The landfill accepted municipal solids waste and cannery wastes. These wastes are classified as non-hazardous solid waste using the criteria in Chapter 15 of Title 23, CCR that was applicable to the landfill at that time.

SURFACE AND GROUNDWATER CONDITIONS

13. The *Water Quality Control Plan for Sacramento and San Joaquin River Basins, Fourth Edition* (hereafter Basin Plan) designates beneficial uses, establishes water quality objectives, and contains implementation plans and policies for all waters of the Basin.
14. Storm runoff from the site is routed to the sedimentation basin. The sedimentation basin is in the south central area of the site, as shown on Attachment B. The basin allows suspended material to settle out from surface water runoff prior to discharge into the Tuolumne River. Discharge from the basin only occurs in very wet weather years. As of January 2009, there have been no discharges from the basin since 31 December 2001.
15. The designated beneficial uses of the Tuolumne River, as specified in the Basin Plan, are municipal and domestic supply; agricultural supply; water contact and non-contact water recreation; warm fresh water habitat; cold fresh water habitat; migration of aquatic organisms; spawning, reproduction, and/or early development; and wildlife habitat.
16. Due to topographic variations across the site, groundwater is first encountered at depths ranging between approximately 20 to 60 feet below grade. The shallow monitoring wells are screened across a 20-foot interval ranging from 40 to 80 feet in elevation above mean sea level. The shallow water-bearing zone is unconfined. The deeper zone groundwater monitoring wells are screened at about 80 to 100 feet bgs in an unconfined to semiconfined aquifer that is likely in hydraulic communication with the shallow zone.
17. Groundwater gradients vary seasonally, but range from southwest to westerly. Groundwater elevations may vary up to five feet, however elevations varied by as much as 15 feet during the winter of 1997, which was unusually wet. The gradient in the shallow zone is approximately 0.31 foot per foot (ft/ft), generally toward the southwest. The gradient in the deeper aquifer is approximately 0.32 ft/ft toward the southwest. According to the Discharger, groundwater velocities calculated from transmissivity values range from 11.4 to 119 feet per year.
18. The designated beneficial uses of the groundwater, as specified in the Basin Plan, are domestic and municipal water supply, agricultural supply, industrial service supply, and industrial process supply.

GROUNDWATER MONITORING AND CORRECTIVE ACTION

19. There are 23 groundwater monitoring wells completed in the shallow groundwater zone and 12 groundwater monitoring wells in the deeper zone. The monitoring well locations are shown on Attachment B.
20. The facility is in corrective action monitoring for impacts to groundwater from volatile organic compounds (VOCs). The two methods of corrective action are: (1) source control measures consisting of installation and operation of the landfill gas (LFG) extraction system and landfill capping, and (2) installation and operation of a groundwater extraction and treatment system. The groundwater extraction and treatment system is located near the southern end of the landfill, as shown on Attachment B.
21. Groundwater degradation at this site was initially identified in 1985 and later confirmed in both 1986 groundwater studies and 1987 Solid Waste Assessment Test (SWAT) water quality studies. Aromatic and halogenated VOCs are present in groundwater in the "shallow" or "upper" groundwater zone under the landfill and downgradient of the site. The lateral and vertical extent of VOCs has not been assessed. Although halogenated VOCs have been continuously detected since 1987, aromatic VOCs have not.
22. As of May 2007, halogenated VOCs remaining in groundwater included 1,1-dichloroethane, 1,1-dichloroethene, tetrachloroethene (PCE), trichloroethene, cis- and trans-1,2-DCE, vinyl chloride, trichlorofluoromethane (Freon-11), and dichlorodifluoromethane (Freon-12). The greatest concentrations of volatiles are under the southernmost portion of the landfill and off-site to the south and southeast. Lower concentrations of VOCs have been detected in the shallow offsite, upgradient wells to the northeast.
23. As of 2007, aromatic VOCs reported in groundwater included benzene, chlorobenzene, toluene, and 1,2-dichloropropane.
24. In 1986, VOCs were detected in "deep" zone monitoring wells and in two domestic wells [the landfill production well and one private well (Streeter) off-site to the south].
25. During 1991, arsenic was reported in monitoring wells MW-14S at 130 micrograms per liter (ug/L). During 1996, arsenic was present in shallow monitoring well MW-4S at 64 ug/L and in all four deep wells and nine other shallow wells at concentrations up to 3.8 ug/L. In 2007, a study of arsenic concentrations in the area of the landfill concluded that natural background concentrations of arsenic ranged from ND to 4.42 ug/L. The primary maximum contaminant level, a drinking water standard, for arsenic is 10 ug/L and the one-in-a-million incremental cancer risk estimate for drinking water based on the US EPA Integrated Risk Information System is 0.02 ug/L. Iron and manganese are elevated in one deep well and six shallow wells. Lead was detected in one deep well at a

concentration above the Public Health Goal for drinking water as recommended by the Office of Environmental Health Hazard Assessment.

26. A LFG control system consisting of an air injection curtain was installed in 1983 along a portion of the site's southern perimeter. Phase 1 of the LFG extraction system, which included the first flare station, was in operation from 1992 to 2006 and covered the northeast one-third of the site. The system was expanded to include 45 gas wells with aboveground piping and a second flare station located near the center of the landfill. The current LFG control system is comprised of 83 extraction wells and one flare station. Many of the VOCs found in groundwater are commonly found in landfill gas. Measurements of LFG concentrations indicate that the system is capturing landfill gas from the landfill. Methane concentrations in each of the shallow, medium, and deep probes around the landfill show methane concentrations at or near zero percent. Methane concentrations in the LFG extraction wells within the waste average about 24 percent.
27. As of 2006, only one flare station (the South Flare) has been operating to burn the landfill gas. The location of the flare station is shown on Attachment B. The North Flare was decommissioned in 2006 due to vandalism (Stanislaus County Sheriff case # S06-62706).
28. During 1991 and 1993, 12 groundwater extraction wells were installed as part of a groundwater remediation system to address groundwater impacts from VOCs and metals. The groundwater remediation system consists of the 12 extraction wells, a granular activated carbon (GAC) treatment system, and eight injection trenches. The injection trenches are located immediately southwest of the treatment plant which is shown on Attachment B along the eastern side of the landfill. Groundwater is pumped from the 12 extraction wells located along the perimeter of the landfill and is pumped through a bag filter to remove suspended solids and then through two 10,000-pound GAC units, in series, to remove VOCs. Treated groundwater, prior to injection into the shallow zone via infiltration trenches, is sampled and analyzed to assess effluent quality from the treatment system and to evaluate the system efficiency.
29. In May 2007, the Discharger completed a study of the southern portion of the landfill and surrounding lands. This study evaluated the distribution of VOCs in existing monitoring wells, and at other locations where samples were collected from direct push borings. Although LFG and groundwater extraction and treatment systems are and have been in operation for more than 15 years, the Discharger concluded that: VOCs and halogenated VOCs continue to be detected in LFG and groundwater beyond the boundary of the landfill; the existing LFG system does not adequately capture the gases; and expansion of the LFG system into the south area of the landfill was recommended. The Discharger concluded that VOCs are distributed in groundwater throughout the area, with the highest concentrations adjacent to the landfill. The study also found that the VOC concentrations were generally higher in the shallow zone compared to the deeper zone groundwater. The Discharger concluded that the existing groundwater extraction system was not

extracting sufficient volumes of water to form a barrier to VOCs migrating away from the site. During 2007 and early 2008, the Discharger upgraded the extraction and treatment system to increase the flow rate, including replacing extraction well pumps, air lines, discharge lines, installing more filters, and replacing the GAC.

30. The US EPA Primary Maximum Concentration Limit for PCE is 5 ug/L. The current LFG system has had minimal impact on reducing the concentrations of PCE in groundwater at MW-12S, MW-14S, MW-19S, and MW-1D. For example, the concentration of PCE at Well MW-1D has steadily increased from 0.6 ug/L in 1995 to 5.6 ug/L in 2008; and the concentration of PCE at MW-12S has ranged from 15 ug/L in 1997 to 21 ug/L in November 2007. A work plan for "hot spot" remediation of PCE was due by 30 October 2008; however, the Discharger has not submitted the work plan. This Order requires the Discharger to submit an Engineering Feasibility Study (EFS) to address hot spot remediation of PCE.
31. On 14 April 2008, the Discharger submitted a work plan for expansion of the LFG extraction and treatment system into the south area of the landfill, connection of the 10 new LFG wells to the existing flare, and installation of two groundwater monitoring wells near the Tuolumne River. The Discharger was required to test and/or sample all new wells. An LFG and groundwater monitoring well installation report, including analytical and test results, was due by 20 September 2008. The Discharger has not submitted the report.
32. The Discharger submitted a report on 1 July 2008 summarizing the upgrades and system effectiveness, and the results of an aquifer test to estimate the radius of influence for each of the groundwater extraction wells. The aquifer test was conducted by shutting off the extraction system (all 12 extraction wells), and measuring the water levels in those wells every 10 minutes for several hours and then over the next several days. The system was then restarted, and further measurements were recorded over several days. Pressure transducers were installed in 23 monitoring wells to observe response away from the extraction wells.
33. The results of the aquifer test indicate that the extraction system did not influence any of the monitoring wells at the landfill. Monitoring wells located closest to the extraction wells were 40 to 60 feet away. The Discharger concluded that the radius of influence of the extraction system was less than the distance to these wells. Pumping rates from the wells ranged from 0.13 gallons per minute (gpm) in EX-1 to about 11 gpm in EX-7, and the total system flow rate was about 61 gpm. Pumping rates were averaging about 40 gpm prior to the system upgrades. Total VOC loading in the influent to the system during the test was about 6.4 grams per day with an average VOC concentration of about 19 ug/L.
34. Based on the results of the aquifer test, the Discharger proposed to prepare a new EFS to compare ongoing use of the groundwater extraction system (including upgrading the

system to achieve higher flow rates) to other available technologies for low-level VOC removal from groundwater.

35. As directed In Regional Water Board staff's 18 September 2008 letter, the Discharger is required to submit an EFS to compare the current groundwater extraction and treatment system to other available technologies for containment, capture, and removal of VOCs. The EFS is due by 30 January 2009 and must include the information in Section 1 of Attachment A to staff's 18 September 2008 letter.
36. As stated in Regional Water Board staff's 18 September 2008 letter, the Discharger is required to submit a Corrective Action Plan for installation of the approved selected remedy for the treatment, removal, and mitigation of VOCs from groundwater. The Corrective Action Plan is due by 31 March 2009 and must include the information in Section 2 of Attachment A to staff's 18 September 2008 letter.
37. This Order requires the Discharger to submit an Operation and Maintenance Plan for the LFG system and the approved selected remedy by 29 July 2009 and to submit a Construction Report by 30 October 2009 to verify completion of construction for the approved selected remedy.
38. Under WDRs R5-00-087, the Discharger has been required to submit historical analytical data annually in an electronic file format (.xls) that is acceptable to the Regional Water Board. The Discharger has not submitted the historical data since submittal of its 2005 annual monitoring report. This Order requires that the Discharger submit all the historical data through 2008 in an electronic format file that is acceptable to the Regional Water Board.

FINANCIAL ASSURANCES

39. The March 1994 Post-Closure Maintenance Plan (PCMP) includes a cost estimate for post-closure maintenance at the landfill. The amount of the post-closure maintenance cost estimate is \$322,780/year. According to the California Integrated Waste Management Board (CIWMB), the amount adjusted for inflation in 2008 dollars is \$441,282 per year. The Discharger has a Pledge of Revenue Agreement on file with the CIWMB for post-closure maintenance.
40. Title 27 Section 22222 requires the Discharger to prepare a cost estimate and establish financial assurances for corrective action of all known or reasonably foreseeable releases at the landfill. This Order therefore requires the Discharger to prepare a cost estimate for corrective action of all known or reasonably foreseeable releases from the landfill. Since the landfill has a known release, the Discharger should prepare a cost estimate with a lump sum present day cost for a third-party to complete remediation of the known release. This Order also requires that the Discharger establish and maintain financial assurance with the CIWMB in at least the amount of this cost estimate, plus annual inflation.

CEQA AND OTHER CONSIDERATIONS

41. The action to revise waste discharge requirements for this existing facility is exempt from the provisions of the California Environmental Quality Act (CEQA), Public Resource Code Section 21000, et seq., and the CEQA guidelines, in accordance with Title 14 CCR, Section 15301.
42. This order implements:
- a. *The Water Quality Control Plan for the Sacramento River and San Joaquin River Basins, Fourth Edition*;
 - b. The prescriptive standards and performance goals of Chapters 1 through 7, Subdivision 1, Division 2, Title 27, of the California Code of Regulations, effective 18 July 1997, and subsequent revisions;
 - c. The prescriptive standards and performance criteria of RCRA Subtitle D, Part 258; and
 - d. State Water Resources Control Board Resolution No. 93-62, *Policy for Regulation of Discharges of Municipal Solid Waste*, adopted 17 June 1993, and amended 21 July 2005.
43. Section 13267(b) of California Water Code provides that: "In conducting an investigation specified in subdivision (a), the regional board may require that any person who has discharged, discharges, or is suspected of discharging, or who proposed to discharge within its region, or any citizen or domiciliary, or political agency or entity of this state who had discharged, discharges, or is suspected of discharging, or who proposed to discharge waste outside of its region that could affect the quality of the waters of the state within its region shall furnish, under penalty of perjury, technical or monitoring program reports which the regional board requires. The burden, including costs of these reports, shall bear a reasonable relationship to the need for the reports and the benefits to be obtained from the reports."
44. The technical reports required by this Order and the attached "Monitoring and Reporting Program No. R5-2009-____" are necessary to assure compliance with these waste discharge requirements. The Discharger owns and operates the facility that discharges the waste subject to this Order.

PROCEDURAL REQUIREMENTS

45. All local agencies with jurisdiction to regulate land use, solid waste disposal, air pollution, and to protect public health have approved the use of this site for the discharges of waste to land stated herein.

46. The Regional Water Board notified the Discharger and interested agencies and persons of its intent to prescribe waste discharge requirements for this discharge, and has provided them with an opportunity for a public hearing and an opportunity to submit their written views and recommendations.
47. The Regional Water Board, in a public meeting, heard and considered all comments pertaining to the discharge.
48. Any person affected by this action of the Regional Water Board may petition the State Water Resources Control Board to review the action in accordance with Sections 2050 through 2068, Title 23, California Code of Regulations. The petition must be received by the State Water Resources Control Board, Office of Chief Counsel, P.O. Box 100, Sacramento, California 95812, within 30 days of the date of issuance of this Order. Copies of the laws and regulations applicable to the filing of a petition are available on the Internet at http://www.waterboards.ca.gov/laws_regulations/ and will be provided on request.

IT IS HEREBY ORDERED, pursuant to Sections 13263 and 13267 of the California Water Code, that Order No. 5-00-087 is rescinded, and that Stanislaus County Department of Environmental Resources, its agents, successors, and assigns, in order to meet the provisions of Division 7 of the California Water Code and the regulations adopted thereunder, shall comply with the following:

A. PROHIBITIONS

1. The discharge of any waste at this facility, other than treated groundwater to the infiltration trenches, is prohibited.
2. The discharge of treated groundwater with detectable levels of organic compounds, or that fails to conform to the site's water quality protection standards, is prohibited.

B. DISCHARGE SPECIFICATIONS

General Specifications

1. Water used for facility maintenance shall be limited to the minimum amount necessary for dust control and irrigation to promote vegetation for erosion control.
2. Groundwater discharged to the unsaturated zone shall be treated to remove organic compounds and shall not exceed the site's water quality protection standards.

Protection from Storm Events

3. Surface drainage from tributary areas and internal site drainage from surface or subsurface sources shall not contact or percolate through wastes.
4. Annually, prior to the anticipated rainy season, but no later than **1 November**, any necessary erosion control measures shall be implemented, and any necessary construction, maintenance, or repairs of precipitation and drainage control facilities shall be completed to prevent erosion or flooding of the facility and to prevent surface drainage from contacting or percolating through wastes.

C. FACILITY SPECIFICATIONS

1. The Discharger shall immediately notify the Regional Water Board of any flooding, unpermitted discharge of waste off-site, equipment failure, slope failure, or other change in site conditions that could impair the integrity of waste or leachate containment facilities or precipitation and drainage control structures.
2. The Discharger shall maintain in good working order any facility, control system, or monitoring device installed to achieve compliance with the waste discharge requirements.
3. Methane and other landfill gases shall be adequately vented, removed from the Unit, or otherwise controlled to prevent the danger of adverse health effects, nuisance conditions, degradation, or the impairment of the beneficial uses of surface water or groundwater due to migration through the unsaturated zone.
4. Surface drainage within the waste management facility shall either be contained on-site or be discharged in accordance with applicable storm water regulations.
5. The Discharger shall maintain a *Storm Water Pollution Prevention Plan and Monitoring Program and Reporting Requirements* in accordance with State Water Resources Control Board Order No. 97-03-DWQ, or retain all storm water on-site.

D. POST-CLOSURE MAINTENANCE SPECIFICATIONS

1. During the closure and post-closure maintenance period, the Discharger shall conduct routine maintenance of the final cover, areas with interim cover, the precipitation and drainage control facilities, the groundwater, unsaturated zone and landfill gas monitoring systems, the landfill gas extraction system, and any facilities associated with corrective action.
2. The Discharger shall, in a timely manner, repair any areas of the final cover that have been damaged by erosion, cracking, differential settlement, subsidence, or any other causes that could allow ponding of surface water or percolation of surface water into the wastes.

3. The Discharger shall perform all post-closure maintenance activities specified in the facility's Final Closure and Post-Closure Maintenance Plan that are not specifically referred to in this Order.
4. The post-closure maintenance period shall continue until the Board determines that the remaining wastes in all waste management units will not threaten water quality.

E. DETECTION AND CORRECTIVE ACTION MONITORING SPECIFICATIONS

1. The Discharger shall comply with the detection and corrective action monitoring program provisions of Title 27 for groundwater, surface water, and the unsaturated zone, as appropriate, and in accordance with Monitoring and Reporting Program No. R5-2009-____.
2. The Discharger shall provide Regional Water Board staff a minimum of **one week** notification prior to commencing any field activities related to the installation, repair, or abandonment of monitoring devices.
3. The Discharger shall comply with the Water Quality Protection Standard as specified in this Order, Monitoring and Reporting Program No. R5-2009-____, and the Standard Provisions and Reporting Requirements, dated April 2000.
4. The Water Quality Protection Standard for organic compounds that are not naturally occurring and not detected in background groundwater samples shall be taken as the detection limit of the analytical method used (i.e., US-EPA methods 8260 and 8270). The repeated detection of one or more non-naturally occurring organic compounds in samples above the Water Quality Protection Standard from detection monitoring wells is evidence of a release from the Unit.
5. The concentrations of the constituents of concern in waters passing the Point of Compliance shall not exceed the concentration limits established pursuant to Monitoring and Reporting Program No.____.
6. For each monitoring event, the Discharger shall determine whether the landfill is in compliance with the Water Quality Protection Standard using procedures specified in Monitoring and Reporting Program No.____ and Title 27 CCR Section 20415(e).
7. The Discharger shall submit for review and approval a Sample Collection and Analysis Plan. The Sample Collection and Analysis Plan shall at a minimum include:
 - a. Sample collection procedures describing purging techniques, sampling equipment, and decontamination of sampling equipment;
 - b. Sample preservation information and shipment procedures;

- c. Sample analytical methods and procedures;
 - d. Sample quality assurance/quality control (QA/QC) procedures; and
 - e. Chain of Custody control.
8. For any given monitored medium, the samples taken from all monitoring points and background monitoring points to satisfy the data analysis requirements for a given reporting period shall all be taken **within a span not to exceed 30 days**, unless a longer time period is approved by the Executive Officer, and shall be taken in a manner that ensures sample independence to the greatest extent feasible. Specific methods of collection and analysis must be identified. Sample collection, storage, and analysis shall be performed according to the most recent version of USEPA Methods, such as the latest editions, as applicable, of: (1) Methods for the Analysis of Organics in Water and Wastewater (USEPA 600 Series), (2) Test Methods for Evaluating Solid Waste (SW-846, latest edition), and (3) Methods for Chemical Analysis of Water and Wastes (USEPA 600/4-79-020), and in accordance with the approved Sample Collection and Analysis Plan.
9. If methods other than USEPA-approved methods or Standard Methods are used, the exact methodology shall be submitted for review and approval prior to use.
10. The **methods of analysis and the detection limits** used must be appropriate for the expected concentrations. For the monitoring of any constituent or parameter that is found in concentrations which produce more than 90% non-numerical determinations (i.e., "trace" or "ND") in data from background monitoring points for that medium, the analytical method having the lowest method detection limit (MDL) shall be selected from among those methods which would provide valid results in light of any matrix effects or interferences.
11. **"Trace" results** - results falling between the MDL and the practical quantitation limit (PQL) - shall be reported as such, and shall be accompanied both by the estimated MDL and PQL values for that analytical run.
12. **MDLs and PQLs** shall be derived by the laboratory for each analytical procedure, according to State of California laboratory accreditation procedures. These MDLs and PQLs shall reflect the detection and quantitation capabilities of the specific analytical procedure and equipment used by the lab, rather than simply being quoted from USEPA analytical method manuals. In relatively interference-free water, laboratory-derived MDLs and PQLs are expected to closely agree with published USEPA MDLs and PQLs.
13. If the laboratory suspects that, due to a change in matrix or other effects, the true detection limit or quantitation limit for a particular analytical run differs significantly from

the laboratory-derived MDL/PQL values, the results shall be flagged accordingly, along with estimates of the detection limit and quantitation limit actually achieved. The **MDL shall always be calculated such that it represents the lowest achievable concentration associated with a 99% reliability of a nonzero result.** The PQL shall always be calculated such that it represents the lowest constituent concentration at which a numerical value can be assigned with reasonable certainty that it represents the constituent's actual concentration in the sample. Normally, PQLs should be set equal to the concentration of the lowest standard used to calibrate the analytical procedure.

14. All **QA/QC data** shall be reported, along with the sample results to which they apply, including the method, equipment, analytical detection and quantitation limits, the percent recovery, an explanation for any recovery that falls outside the QC limits, the results of equipment and method blanks, the results of spiked and surrogate samples, the frequency of quality control analysis, and the name and qualifications of the person(s) performing the analyses. Sample results shall be reported unadjusted for blank results or spike recoveries. In cases where contaminants are detected in QA/QC samples (i.e., field, trip, or lab blanks), the accompanying sample results shall be appropriately flagged.
15. Unknown chromatographic peaks shall be reported, flagged, and tracked for potential comparison to subsequent unknown peaks that may be observed in future sampling events. Identification of unknown chromatographic peaks that recur in subsequent sampling events may be required.
16. The statistical method shall account for data below the practical quantitation limit (PQL) with one or more statistical procedures that are protective of human health and the environment. Any PQL validated pursuant to Title 27 CCR Section 20415(e)(7) that is used in the statistical method shall be **the lowest concentration (or value) that can be reliably achieved** within limits of precision and accuracy specified in the WDRs for routine laboratory operating conditions that are available to the facility. The Discharger's technical report, pursuant to Title 27 CCR Section 20415(e)(7), shall consider the PQLs listed in Appendix IX to Chapter 14 of Division 4.5 of Title 22, CCR, for guidance when specifying limits of precision and accuracy. For any given constituent monitored at a background or downgradient monitoring point, an indication that falls between the MDL and the PQL for that constituent (hereinafter called a "trace" detection) shall be identified and used in appropriate statistical or nonstatistical tests. Nevertheless, for a statistical method that is compatible with the proportion of censored data (trace and ND indications) in the data set, the Discharger can use the laboratory's concentration estimates in the trace range (if available) for statistical analysis, in order to increase the statistical power by decreasing the number of "ties".
17. Background for water samples or soil-pore gas samples shall be represented by the data from all samples taken from applicable background monitoring points during that

reporting period (at least one sample from each background monitoring point). The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval.

18. The Discharger may propose an alternate statistical method [to the methods listed under Title 27 CCR Section 20415(e)(8)(A-D)] in accordance with Title 27 CCR Section 20415(e)(8)(E), for review and approval. Upon receiving written approval, alternate statistical procedures may be used for determining the significance of analytical results for common laboratory contaminants (e.g., methylene chloride, acetone, diethylhexyl phthalate, and di-n-octyl phthalate). Nevertheless, analytical results involving detection of these analytes in any background or downgradient sample shall be reported and flagged for easy reference by Regional Water Board staff.
19. The Discharger shall use the following non-statistical method for all analytes that are detected in less than 10% of the background samples. The non-statistical method shall be implemented as follows:
 - a. From the constituent of concern or monitoring parameter list, identify each analyte in the **current** sample that exceeds either its respective MDL or PQL. Unless a given monitoring point is already under corrective action monitoring for a given constituent, the Discharger shall conclude that the exceedance provides a preliminary indication of a release or a change in the nature or extent of the release, at that monitoring point, if **either**:
 - 1) The data contain two or more analytes that are detected in less than 10% of background samples that equal or exceed their respective MDLs; or
 - 2) The data contain one or more analyte that equals or exceeds its PQL.
 - b. **Discrete Retest** [Title 27 CCR Section 20415(e)(8)(E)]:
 - 1) In the event that the Discharger concludes (pursuant to paragraph 19.a., above) that there is a preliminary indication of a release, then the Discharger shall immediately notify Regional Water Board staff by phone or e-mail and, within 30 days of such indication, shall collect two new (retest) samples from the monitoring point where the release is preliminarily indicated.
 - 2) For any given retest sample, the Discharger shall include, in the retest analysis, **only the laboratory analytical results for those analytes detected in the original sample**. As soon as the retest data are available, the Discharger shall conclude that there is measurably significant evidence of a release if two or

more analytes equal or exceed their respective MDLs or if one or more analyte equals or exceeds its PQL and shall:

- a) **Immediately** notify the Regional Water Board about any constituent or constituents verified to be present at the monitoring point, and follow up with written notification submitted by certified mail **within seven days** of validation; and
 - b) Comply with ¶20, below if any constituent or constituents were verified to be present.
- 3) Any analyte that is confirmed per this method shall be added to the monitoring parameter list such that it is monitored during each regular monitoring event.

20. If the Discharger determines that there is measurably significant evidence of a release from the Unit at any monitoring point, the Discharger shall **immediately** implement the requirements of **XI. Response To A Release, C. Release Has Been Verified**, contained in the Standard Provisions and Reporting Requirements.

F. FINANCIAL ASSURANCES

1. The Discharger shall obtain and maintain Financial Assurance Instruments (Instruments), which comply with CCR Title 27 (Sections 22207 [Closure Fund], 22212 [Post-Closure Fund], and 22220 et seq. [Corrective Action Fund]) and 40 CFR parts 257 and 258. The Discharger shall evaluate the cost of Financial Assurance to cover the estimated costs of the worst case known release. The Discharger shall submit a report on financial assurance for corrective action for the Regional Water Board Executive Officer's review and approval within 60 days of this Order's adoption date. The Discharger may combine the three components (Closure, Post Closure, Corrective Action) of the Instruments into one report to comply with this requirement. The Discharger shall also submit evidence (e.g., an acceptance letter from the California Integrated Waste Management Board—Financial Assurance Division) to the Regional Board's Executive Officer that a financial assurance instrument(s) is in place for closure, post-closure, and corrective action within 120 days of adoptions of these WDRs. The most recent acceptance letter shall also be included in the Landfill's Annual Report to the Executive Officer.
2. At least **annually** (as required by the CIWMB), the Discharger shall submit a report demonstrating that the financial assurance fund for corrective action has been updated in accordance with the fund balance calculations provided in Section 22226 of Title 27.
3. The Discharger shall maintain assurances of financial responsibility with the CIWMB for post-closure maintenance costs in the amount of the cost estimate in the March 1994 Post-Closure Maintenance Plan (PCMP), plus annual inflation.

4. At least **annually** (as required by the CIWMB), the Discharger shall submit a report demonstrating that the financial assurance fund for closure and post-closure maintenance has been updated in accordance with the fund balance calculations provided in Section 22225 of Title 27.

G. PROVISIONS

1. The Discharger shall maintain a copy of this Order at the facility and make it available at all times to facility operating personnel, who shall be familiar with its contents, and to regulatory agency personnel.
2. The Discharger shall comply with all applicable provisions of Title 27 and 40 Code of Federal Regulations Part 258 (Subtitle D) that are not specifically referred to in this Order.
3. The Discharger shall comply with Monitoring and Reporting Program No. R5-2009-____, which is incorporated into and made part of this Order.
4. The Discharger shall comply with the applicable portions of the Standard Provisions and Reporting Requirements for Waste Discharge Requirements for Nonhazardous Solid Waste Discharges Regulated by Title 27 and/or Subtitle D (Title 27 CCR Section 20005 et seq. and 40 CFR 258 et seq.), dated April 2000, which are hereby incorporated into this Order.
5. In the event the Discharger does not comply or will be unable to comply with any prohibition or limitation of this Order for any reason, the Discharger shall notify the Regional Water Board office by telephone **as soon as** it or its agents have knowledge of such noncompliance or potential for noncompliance, and shall confirm this notification in writing **within two weeks**. The written notification shall state the nature, time, and cause of noncompliance, and shall describe the measures being taken to prevent recurrences and shall include a timetable for corrective actions.
6. All reports and transmittal letters shall be signed by persons identified below:
 - a. For a corporation: by a principal executive officer of at least the level of senior vice-president.
 - b. For a partnership or sole proprietorship: by a general partner or the proprietor.
 - c. For a municipality, state, federal or other public agency: by either a principal executive officer or ranking elected or appointed official.
 - d. A duly authorized representative of a person designated in a, b, or c above if;

- 1) The authorization is made in writing by a person described in a, b, or c of this provision;
 - 2) The authorization specifies either an individual or a position having responsibility for the overall operation of the regulated facility or activity, such as the position of plant manager, operator of a Unit, superintendent, or position of equivalent responsibility. (A duly authorized representative may thus be either a named individual or any individual occupying a named position); and
 - 3) The written authorization is submitted to the Regional Water Board.
- e. Any person signing a document under this Section shall make the following certification:
- “I certify under penalty of law that I have personally examined and am familiar with the information submitted in this document and all attachments and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.”
7. The Discharger shall take all reasonable steps to minimize any adverse impact to the waters of the State resulting from noncompliance with this Order. Such steps shall include accelerated or additional monitoring as necessary to evaluate the nature, extent, and impact of the noncompliance.
 8. The owner of the waste management facility shall have the continuing responsibility to assure protection of waters of the state from discharged wastes and from gases and leachate generated by discharged waste during the postclosure maintenance period of the Unit(s) and during subsequent use of the property for other purposes.
 9. The fact that it would have been necessary to halt or reduce the permitted activity in order to maintain compliance with this Order shall not be regarded as a defense for the Discharger's violations of the Order.
 10. To assume ownership or operation under this Order, the succeeding owner or operator must apply in writing to the Regional Water Board requesting transfer of the Order within 14 days of assuming ownership or operation of this facility. The request must contain the requesting entity's full legal name, the State of incorporation if a corporation, the name and address and telephone number of the persons responsible for contact with the Regional Water Board, and a statement. The statement shall comply with the signatory requirements contained in Provision F.6 and state that the new owner or operator assumes full responsibility for compliance with this Order. Failure to submit the request shall be considered a discharge without requirements, a

violation of the California Water Code. Transfer of this Order shall be approved or disapproved by the Regional Water Board.

11. All technical reports required by this Order shall be submitted pursuant to Section 13267 of the California Water Code. Technical reports are necessary in order to demonstrate compliance with the requirements of this Order, including but not limited to, requirements for remediation of impacted groundwater.
12. The Discharger shall complete the tasks contained in these waste discharge requirements in accordance with the following time schedule:
 - a. By **30 April 2009**, submit a present day lump-sum cost estimate for a third-party to complete corrective action of the known release at the landfill per Sections 20380(b) and 22221 of Title 27 and a proposed financial assurances mechanism meeting the requirements of Title 27 for maintaining financial assurances.
 - b. By **30 May 2009**, submit an electronic Excel (.xls) file with all historical analytical data through 2008 in a format acceptable to the Regional Water Board.
 - c. By **30 May 2009**, submit an Engineering Feasibility Study (EFS) for treatment of PCE hot spots in groundwater at MW-2, MW-13, MW-17, and MW-18 as described in Finding 30. The EFS shall include information required in Attachment C, *Items to Be Included in the Feasibility Study/Remedial Options Evaluation Report*.
 - d. By **30 June 2009**, submit a Sample Collection and Analysis Plan with the information required in Detection and Corrective Action Monitoring Specification E.7.
 - e. By **29 July 2009**, submit a complete Operation and Maintenance Plan for the approved LFG and VOC groundwater remedy.
 - f. By **28 August 2009**, submit a copy of correspondence with the CIWMB requesting to establish financial assurances for corrective action in the amount of the approved cost estimate and using the approved financial assurances mechanism.
 - g. By **30 October 2009**, submit a complete Construction Report that documents the installation, startup, and operation of the LFG and groundwater remedy approved by the Regional Water Board.
 - h. By **31 January 2010 and annually thereafter**, upload monitoring reports, a site map, well survey data, and analytical data into the GeoTracker database, as required by Chapter 30 of Title 23. The global ID number for the Geer Road Landfill is L10005824413.

- i. By **31 January 2010 and annually thereafter**, submit an electronic Excel (.xls) file with all historical and current analytical data in a format acceptable to the Regional Water Board.

I, PAMELA C. CREEDON, Executive Officer, do hereby certify that the foregoing is a full, true, and correct copy of an Order adopted by the California Regional Water Quality Control Board, Central Valley Region, on _____.

PAMELA C. CREEDON, Executive Officer

WLB